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official magazine of the
Atari Computer Association of Orange County

Volume 7, Number 8   August 1986

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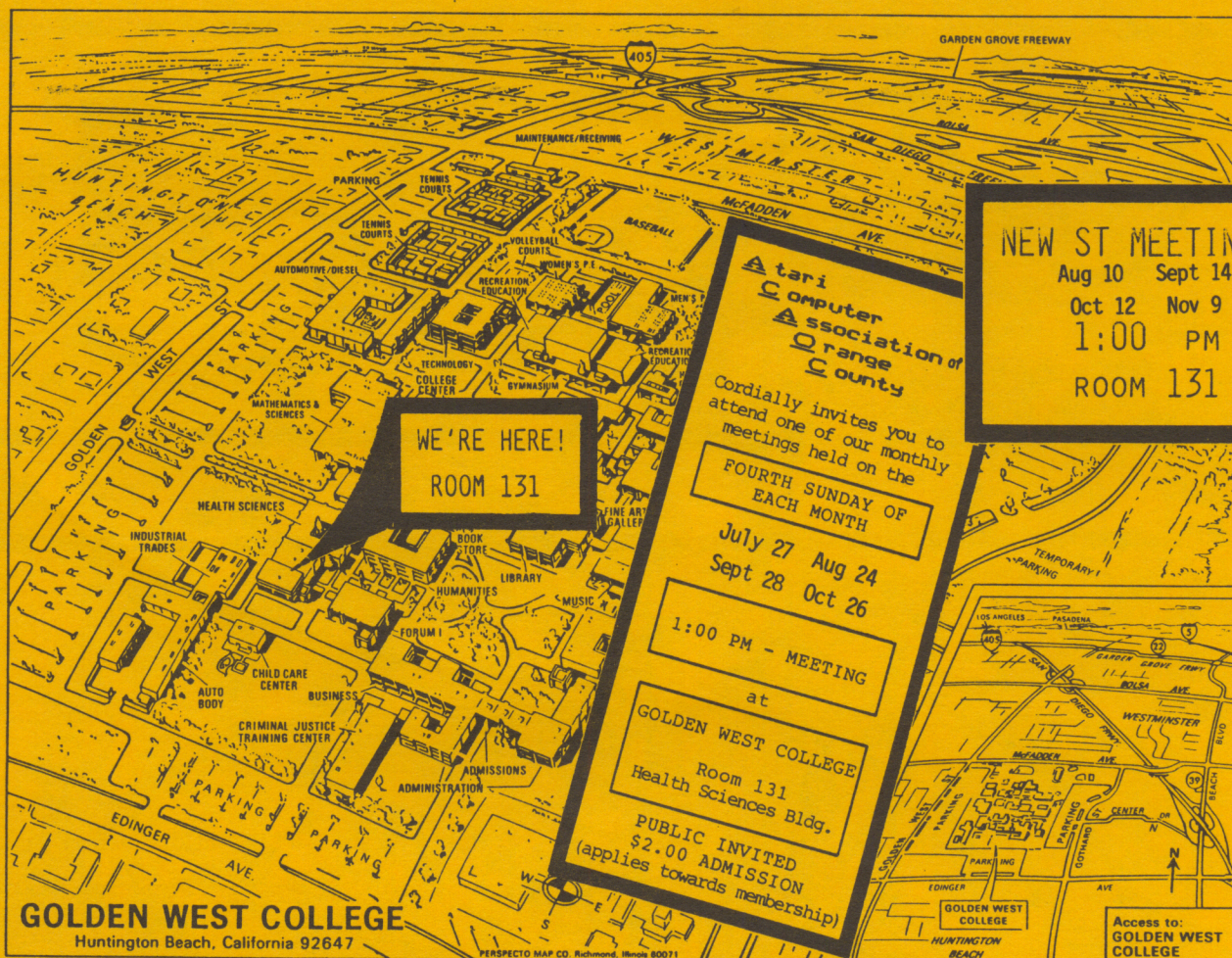
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BBS Sysop: Tim Cardin (714) 971-8344
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ST Librarian: Brandon Murikami (714) 898-4087
Book Librarian: Dan Klaffke (213) 864-2874

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Membership Committee: Bill Bentley, Erika Bentley
ACAOC Artist: Harry Brice

Notes From The Editor... And President
By Mike Fulton, Editor, ACAOC OrnJuce

Well now look at the fine mess I've gotten myself into. I opened my mouth at the wrong moment, and now I'm the new ACAOC President. I'll also be staying on as OrnJuce Editor, so I may be needing your help from time to time.

For a while, it looked like I was going to end up as the new president. A few other names were mentioned, but nothing turned out. I had nothing against the idea of becoming president, but I didn't want to give up being Editor, and I wasn't sure that I could take on both jobs and give both the attention they need. And I didn't know what club members would think about the idea. Now it looks as though we'll all find out soon enough.

Because of the great job Russell Kavanagh has done as President since February 1985, my task is a bit easier. I don't have to worry about a pile of unpaid bills or back taxes. I don't have to worry about finding an almost completely new set of people to run the club. Because of the job Russell has done, there are a lot of problems that I don't have to deal with. But problems, like time, never stop coming. It's just a matter of time. When that time comes, I may need your help.

Bob Brodie is taking on the job of Librarian from Harjit Singh. Harjit's done an great job with the library this past year, but with school and other interests, it's hard to give it the time he would like. Bob's been helping out Harjit with the library for the last few months. Bob was one of those names mentioned for president, but I hear his wife threatened to do him bodily harm if he volunteered. Perhaps I should have gotten married a few months back...

Brandon Murikami is a long-time ACAOC member, and he's also a new ST owner. He's agreed to take on the task of ST Librarian that I've been doing since the ST SIG was formed. I'm sure that Brandon will do a fine job, so go easy on him. Also, Paul Wu will be helping out Brandon from time to time.

Don Dame is taking on the job of Secretary from Margie McGonagle. Don is a fairly new member of the ACAOC, and is quite active.

Tim Cardin is still the system operator of the club's OrnJuce BBS. If you don't have a modem, you've been missing out on one of the club's best features. Tim doing a fantastic job and things are looking to get even better.

With a little luck, the club will be getting a 10 megabyte hard disk drive for the BBS soon. This will vastly improve the quality of the BBS. Right now, the BBS is running on an 800XL with 2 double-sided double density disk drives. Now for a person's regular system, that's a nice set-up. But for a BBS, it's pretty small. A hard disk drive is much faster than a regular drive, and stores many times more data (about 110 times more than a 1050 in single density!). This means that there will be a LOT more room for download files, and the BBS will run much faster and have more features.

There are some people who think that having a hard disk for the BBS will mean being able to put the entire ACAOC library, both 8-bit and ST, onto the BBS. Come back to Earth. While 10 megabytes is a lot of storage, it's not that much. First of all, we have quite a few disks in the 8-bit library, and the whole 10 megabytes is only about 30 ST disks; we already have nearly that many disks in the ST library. We also have some programs in the 8-bit library which aren't in files; they are just boot disks. And some programs require many files to work, so it's sometimes hard to be sure that you've downloaded everything that you need. Also, the BBS program itself will use part of the storage for various purposes. We will be able to put a lot of good stuff on the BBS. But not everything.

Erika Bentley will continue as ACAOC Treasurer. She's done an great job with the club's finances, in addition to performing several other jobs, including keeping the club's membership database and printing the mailing labels for the OrnJuce each month. She and her husband Bill are also the hosts of the ACAOC's monthly business meeting.

Harry Brice is the artist of the many fine illustrations which grace the OrnJuce each month. I've received many fine comments from other editors about Harry's artwork, and I'm sorry if I haven't always remembered to pass them on. I do so now. Most of the year, Harry isn't even able to come to the meetings, since he works on Sunday afternoons at Disneyland, but he's still one of the club's biggest supporters. He often makes the summer meetings, so make sure you tell him thanks when you see him! Harry is a proud new owner of an Atari 520ST, so perhaps we'll see some ST computer art from him soon.

Others I'd like to mention and thank include Dan Klaffke, the club's Book Librarian, and Carl Grinstead, who has often brought equipment to meetings and is always willing to help.

There are others I'm sure I've forgotten, so consider yourself mentioned. There are others who will step forward to help during the next year. Don't be shy about it! We may need all the help we can get!
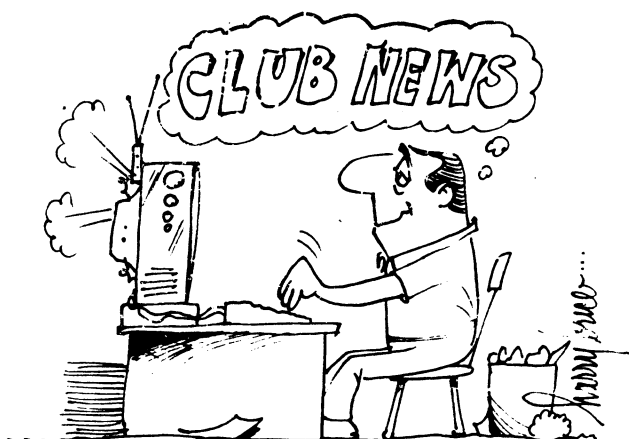
June ST Meeting

The June 8 ACAOC ST Meeting began with the Random Access question and answer period. After the break, there were some software demonstrations. One program shown was Antic's new CAD-3D, written by long-time Atari programmer Tom Hudson. This program will be one of the prizes in an upcoming drawing.

June Meeting Report

The June 22 meeting of the ACAOC began with a very special guest speaker, Bill Wilkinson, of Optimized Systems Software and Compute! Magazine. Bill was on hand to show OSS products for both the 8-bit Atari and ST computer lines. He also commented upon many questions about the latest rumors in the Atari world. All in all, it was a very good show.

After Bill's talk, we had the break, and then the Random Access Question and Answer Period. Also, the elections for the ACAOC Board of Directors was held. The new board is: Erika Bentley, Tim Cardin, Don Dame, Kevin Hammel, and Carl Grinstead. Also, new ACAOC officers were named. Mike Fulton will take on the post of President, in addition to continuing as Editor. Erika Bentley and Tim Cardin are continuing as Treasurer and BBS Sysop, respectively. Bob Brodie is taking the reins of the Librarian Position from Harjit Singh. Don Dame is our new Secretary, following in Margie McGonagle's footsteps. There was also a drawing held, and our guest, Bill Wilkinson, even won one of the prizes!

July Business Meeting

At the July business meeting, the reins of power were passed on from Russell Kavanagh to Mike Fulton. That is, Russell gave Mike a few boxes of club-related materials and the meeting gavel. A few technical matters regarding the possible hard disk drive for the BBS were discussed. More on this will become known at the end of July.

July Meeting

The July meeting of the ACAOC will be held on July 22, at the same old place and same old time. See the inside front cover for more information. Software demonstrations are planned for the meeting.

August ST meeting

The August ST meeting is on August 10, at the usual place and time. See the inside front cover for more information. Software demonstrations are planned, including the new FLASH! terminal program. A special guest may appear, but details are not finalized yet.

ACAOC Helpline

Need Help? ACAOC Members with certain areas of expertise have agreed to help other members with any problems or questions in their area.

When calling the Helpline volunteers, please do so ONLY BETWEEN 7:00pm AND 8:30pm, unless other arrangements have been made beforehand.

Atari ST – Mike Fulton	(213) 860-9101
Modems – Dan Klaffke	(213) 864-2874
Hardware – Harjit Singh	(714) 827-3236
BASIC XL/XE – Al Cheser	(714) 635-8621
Programming – Bill Bentley	(714) 546-9482
Assembly Lang. – Open	
Graphics – Kevin Hammel	(714) 525-9413
Getting Started – Margie Mcgonagle	(213) 944-2890
Infocom Games – Margie McGonagle	(213) 944-2890
Sympathy – Erika Bentley	(714) 546-9482

Welcome to our newest members:

Doug Anderson   Jeff Bertuleit
James Brophy   Larry Brown
Charles Everts   John Hershberger
Hal Held   Philip Jakubik
Richard Lindquardt   Craig Moulton
Jack Rodiques   Leo Roth
Jay Tomlinson, Jr.   James Welton

July Expirations:

Leroy Bainbridge   Darryl Bradford
Harry Brice   Tom Cantwell
Dave Carpenter   Bertram Chalawsky
Bill Cousert   Ernest Dale
Gerry De Rienzo   Ken Drachuk
Donald Foster   Rick Girtman
Matt Hallock   Douglas Halpin
George King   John Lavrakas
David Lilly   Harry Maltby
Greg Marquez   Calvin Mclauglin
Chris Mckinney   John Montanero
Leo Moos   Gerlad Muir
Steve Peterson   Brian Ravenscroft
Gary Reed   Dan Sherlock

August Expirations:

Ed Bleau   Wayne Chase
Stephen Chetkin   Billy Eng
Steven Everts   Joe Frisbee
Carl Grinstead   Margaret Harriman
Bob Haskins   Steve Johnson
Dan Klaffke   Paul Koerber
John Libby   Robert McLeash
Bob Mistofsky   Brandon Murikami
Fred Perry   Jeff Reid
Philip Van Camp, Jr.   Chuck Williamson

The following memberships have expired:

Darcy Anvar   Michael Au
Doug Brocker   Al Cheser
Tom Christensen   Charles Christy
Don Dixon   Charles Donley
Shanon Fernald   Jim Fleming
Charles French   Jon Green
Bill Holland, Jr.   Doug Keller
Mark Kline   Erik Larson
Frank Loya   Charles Mcclure
David Mclean   John Matheson
Scott Melugin   David Perdue
Glendon Raynes   Robin Ready
Ronald Roslawsky   Jim Rothrock
Albert Rutledge   Peter Sosrodjojo
George Sperakos   Andrew Tait
Tri Van To   Jimmie Weatherford
Keith Wood   William Wright
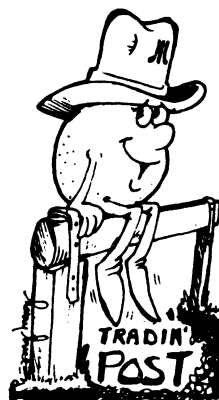
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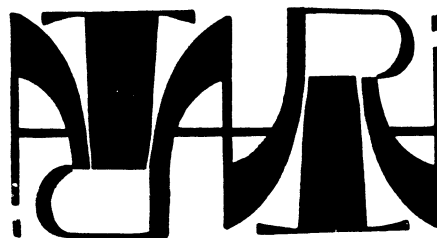
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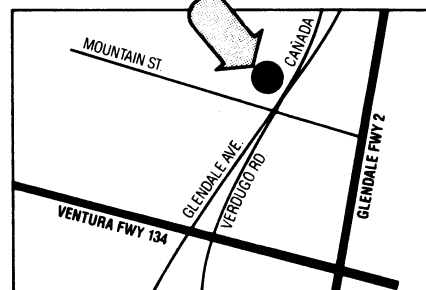Students with ID _____ **2.00**
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Super Boulder Dash
Reviewed by Steve Billings, Portland Atari Club

I have been playing a new old game on my Atari 800XL. Boulder Dash has been around for a while, even though it was a game that I personally had overlooked. It's a sort of maze-type game that vaguely resembles Dig Dug only in the sense that you are digging tunnels underground. It is much better that Dig Dug, though, and if you like games similar to Miner 2049er, Bounty Bob Strikes Back, or Montazuma's Revenge, then you will undoubtedly like Boulder Dash.

The sharp-eyed among you may have noticed that this article is titled "Super Boulder Dash," not "Boulder Dash." The new sequel to Boulder Dash is once again written by the folks at First Star Software, but Super Boulder Dash is being distributed by Electronic Arts.

Super Boulder Dash contains the original Boulder Dash, with 16 different screens to conquer, on the reverse side of the disk. Super Boulder Dash has 16 more screens, and they are even more difficult than those in the first version! So even if you have the first version already, and have enjoyed it, you might want to check out the new Super Boulder Dash and continue your search for diamonds and glory under even more trying circumstances.

You must be careful to avoid digging under buried rocks. If you dislodge them they will fall on you. There is a science to it, an unwritten law of physics, so to speak. If you observe when the rocks are secure, and when they are in a position to fall, you can be prepared.

There are other hazards, such as deadly butterflies and fireflies. Their touch is deadly, but their behaviour is predictable. Figure out their pattern, and you have a chance at getting past them.

Another denizen of the underground arena is the Amoeba. This green blob grows and grows as long as it has something to eat. It's not dangerous in itself, in that it won't attack you directly, but it sometimes must be contained before it contains you.

Each screen of the game is much larger than the TV screen, and the field scrolls around very nicely as you approach the edges of the screen. The graphics and smoothness of the game are excellent.

Electronic Arts has not been particularly benevolent to Atari and its legions of late, but I will admit that the stuff they do distribute is of excellent quality. New software for the 8-bit Atari has been slack lately, but this is an attractive

addition to the shelf.

I am thoroughly enjoying Boulder Dash and Super Boulder Dash. If you are looking for something that will keep you challenged and excited, then take a look at this one. I'm sorry that I overlooked it for so long.
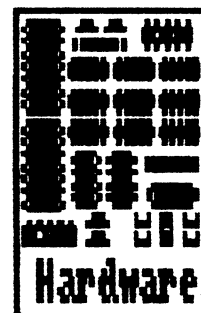
Well Deserved Praise

Today our regular June meeting was held
All was pre-planned and all went so well
Month after month we enjoy special guests
Or watch new software being put to the test.

We can get library disks for a minimal fee
News what's happening with "the powers that be"
We get help with our problems, our frustrations are vent
And like clockwork, our publication each month is sent.

Christmas parties and picnics are planned for us too
And chances to win prizes, and that's just a few
Of the well organized projects we've come to expect
Oh! RUSSELL!, past president, you've gained our respect!!

How sad you're stepping down, It's a great loss indeed
So many of us are followers, so few who can lead
Good Luck with your new group. (Won't mention the name)
But know that we realize our loss is their gain!

I don't wish to wait until other officers go
to mention how appreciated they are.... also
Our resident genius, and new president now
Namely, MIKE FULTON, who can show us all how!

He's done a great job in his editor's hat
For his many articles and reviews, he deserves a big pat
He'll continue these duties, with his additional post
We appreciate you Mike and we wish you the most.

Thanks go to each and every one of our staff
Those who are serious, or who make us laugh
Whether you're coming or going, we want you to know
Just how grateful we are!! Now on with the show.

Florence Frisbee
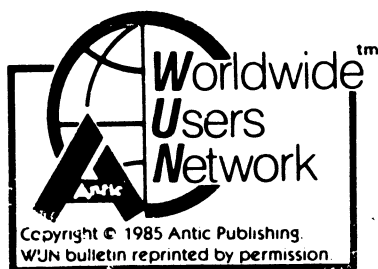
Assembly Language
Course for the
Worldwide Users
Network

By Chris Crawford

This is the eighth part in an eight part series on assembly language programming. These articles are presented to the ACAOC OrnJuce readers through the Worldwide Users Network (WUN), initiated by Antic Magazine.

Lesson Eight
SOME ADVANCED TOPICS

We have covered all of the traditional material associated with 6502 assembly language programming. However, there remain a number of topics that should be addressed before we finish. They are not closely associated with each other, so I will take them in random order.

The first topic is perhaps the most difficult one for a beginning assembly-language programmer: Where do I begin? How do I put together an entire assembly language project?

The problem here is seldom a technical one. Most beginners are stopped by their own lack of goals rather than any lack of technical expertise. One does not just write an assembly language program because one knows assembly language -- that is putting the cart before the horse. One starts with goals and then considers the means of achieving them.

A story from my early days with micros will illustrate this point. I did not have anybody to teach me assembly language. I decided in 1976 that I wanted to do wargames on computers. Accordingly, I bought a KIM-1, an early 6502-based single-board computer. I received it in January 1977. I studied the manuals and taught myself 6502 machine language. I had my first wargame up and running in six weeks. That means that I not only taught myself 6502 in six weeks, but I also wrote and debugged a program at the same time.

Now, the point of this story is NOT "Wow, isn't Chris Crawford the smartest programmer who ever lived!" The point of this story is that goal-oriented learning is far more effective than goal-less learning. Had I sat in on some technical course on 6502, I would have taken months and months to learn the material. Because I had a clear goal, I learned very quickly.

My advice to you, the beginning assembly pro-grammer, is this: You have acquainted yourself with the rudiments of 6502 programming. If you have some project you would like to pursue, some goal you would like to achieve, then do it. If not, don't waste your time trying to use a tool for its own sake.

Assuming you pass this first test, there remains the broad problem of organizing your assembly language program. I suggest that you break your program up into six modules, each forming a separate source code file. These six modules would be:

EQUATES file: this file defines all of the equates used by the program: the data areas, the page zero and page six usage, and perhaps some of the large graphics and screen structures.

DATA file: this file contains all of the static tables used by the program. This would include all the text messages that would be printed onto the screen, bitmaps of graphics images, graphics character set definitions, and so forth.

INITIALIZATION code: this file contains the routines that initialize the program when it first fires up. They set up the screen, clear out all the special graphics and sound registers, zero out all the arrays that need to be cleared, and do all the other legwork associated with clearing the decks for a program.

INTERRUPT code: this module contains the code associated with any interrupts used by your program. This would most commonly involve vertical blank interrupts and display list interrupts. Inasmuch as your interrupts should be well-separated from your other code, you might as well keep the code in a separate file.

MAINLINE code. This includes the main program loop that controls the primary behavior of the program. If you have problems imagining this, think of it as nothing more than a series of subroutine calls arranged in a loop, with each subroutine handling one chunk of the overall process.

SUBROUTINE code: After a while, you build up a collection of subroutines for handling standard processes in the program. Keep them here.

The second topic I would like to talk about is the place of the 6502 in the larger world of microprocessors. The 6502 is undoubtedly the most successful of microprocessors to date, having been installed in more systems than any other

microprocessor. It is also a very old microprocessor, having first appeared in 1976. That makes it about ten years old.

A very simple way to approach the world of microprocessors is to group them into two sets -- the Sixes and the Eights. The Eights represent the earliest group of microprocessors, they trace their lineage all the way back to the 4004, the first microprocessor. The 4004 was followed by the 8008, the first eight-bit microprocessor. The 8008 was superseded by the 8080, which was in turn followed by the Z-80. The Z-80 was the most advanced eight-bit processor in the Eights line. The next step was to go to 16 bits with the 8088 and 8086. These were followed by the more powerful 80186, 80286, and 80386.

The fundamental philosophy of all the Eights can be expressed in two words: features and compatibility. The designers of the Eights were always adding new features to the microprocessors with each successive generation. The goal seemed to be to pack as many bells and whistles in as would fit. The second goal, compatibility, meant compatibility with the previous microprocessor in the series. This insured that software developed for previous versions would still run on the newer versions.

The result of this design philosophy was a series of powerful microprocessors that were quite complex in layout and rather difficult to learn. The features were piled up on each other in a bewildering array. Once you learn the system, it seems natural enough. But it is something of a mess.

The Sixes include the 6800, the 6502, the 6809, and the 68000. The two key words guiding the design of the Sixes are cleanliness and speed. The idea was to make the intruction sets clean, powerful, and fast. The hope was that the processors would be so easy to learn that compatibility would not be a problem. The design approach was to use just a few simple intructions, but give them variations that greatly extend their power. Thus, the 6502 has a LDA intruction that can be used with a great many addressing modes.

The 68000 is the 32-bit entry into the Sixes line. It carries the idea of cleanliness even further than the 6502. The 68000 uses a single intruction with different modes to replace the 6502 intructions LDA, LDX, LDY, STA, STX, STY, TXA, TAX, TYA, PHA and PLA. That's quite a simplification!

The 68000 also boasts sixteen registers, each 32 bits wide. That's a total of 512 bits of register space, the 6502 has 32 bits of equivalent register space. Those sixteen registers eliminate many of the data-shuffling problems so common with the 6502.

The 68000 has a linear address space 24 bits wide -- that's sixteen megabytes! Thus, a 68000 can directly address 16 megabytes of RAM and ROM. The 6502, by contrast, can only address 64K directly -- it must use paging systems that slow it down to address more memory.

Finally, the 68000 has a number of advanced capabilities that make possible a number of special capabilities. I will describe just one: stack frames. The 68000 makes it easy to set up a local, temporary stack when you enter a subroutine. Thus, subroutines can have their own local variables stored on the stack, accessed via a special stack pointer register. The 68000 will manage all the housekeeping necessary to keep such a system straight.

Did I mention that 68000 has hardware multiply/divide?

***** THE END *****

I hope you have enjoyed this eight part series on assembly language. While the articles generally used 6502 assembly language, as used on the 8-bit Ataris, the concepts of assembly language programming are very general, and much of the information in this series can be applied to the 68000 assembly language for the Atari ST series.

Thanks,
Mike Fulton, OrnJuce Editor

Print Shop Companion
Reviewed by Mike Fulton, ACAOC OrnJuce

When Broderbund released Print Shop, it swiftly became one of the best selling programs ever made for the Atari. But despite its widespread popularity, there were still some complaints. For example, the program restricted you to using the fonts and border styles that came on the original Print Shop disk, although you could load and save Print Shop graphics on other disks. Since the Print Shop disk has less than a dozen fonts, and less than a dozen border styles, this was a big restriction. To fix this, Broderbund has released a sister program for Print Shop, Print Shop Companion. Among other features, this program allows you to design your own fonts and border styles, and modifies the Print Shop disk so that the Print Shop program can load fonts and borders from other disks.

Besides the font and border editors, Print Shop Companion, there is an improved graphics editor for creating Print Shop graphics. A "Tile Magic" option lets you create patterned graphics for special purposes. The "Creature Maker" creates graphics of strange characters. Finally, there is an option for making your own calendars.

Like Print Shop, Print Shop Companion comes up into a main menu screen showing all of your choices. The first time you run the program, the menu choice is automatically set to the Set-up option, so that you can modify your Print Shop disk start using Print Shop Companion right away.

Let's look first at the Graphic Editor+ feature of Print Shop Companion. Besides all of the features from the Print Shop's regular graphic editor, there are many new features. You can draw lines from one point to another, or draw ovals, circles, boxes, and rays. One really nice touch is the ability to add text to your graphics. Seventeen different fill patterns can be used to fill parts of your graphics. Finally, in case you make a mistake, you can use the Undo command to fix it.

You can set up a mirror effect, so that everything you draw in one part of the graphic is duplicated in one or more other parts. This option works well when drawing symmetrical images. Another option lets you display the current graphic as a tile pattern. This draws a screenfull of graphics so that you can see how that graphic looks as a large tiled pattern.

Other options of the Graphic Editor+ include the ability to delete or insert rows and columns in the graphic. You can also flip the image either vertically or horizontally. You can invert the image,

changing black to white and vice versa. In case all these new commands are hard to remember, there is a handy menu on the right side of the screen.

There are several graphics included on the Print Shop Companion disk. Some of them are numbers which you can superimpose to make up any two-digit number, along with graphics with letters like "rd" or "st" for adding to the numbers for making graphics of "1st" or "23rd" or similar combinations.

The Graphic Editor+ allows you to load a screen created with the Print Shop Screen Magic feature, and capture part of it to use as a graphic. You first load the screen, and then it will be shown with a small flashing box. You move the box to cover the part of the screen you want, and then press Return. You have now captured the graphic, and can modify or save it as you wish.

The Tile Magic and Creature Maker options are closely related to the Graphic Editor+ in many ways. Tile Magic is very simple to use. You just choose the option from the main menu, and it will show you a large square in which a changing kaleidoscopic pattern is drawn. When the pattern is something you want to save, you press the Escape key to freeze the image. Now you can either save the pattern as a Print Shop graphic, go directly into the Graphic Editor+ to modify the pattern, or press the Escape key again to continue changing the pattern.

The Creature Maker feature allows you to mix and match body parts of several creatures to create your own bizzare lifeforms. Each creature is divided into three parts, the head, the torso, and the legs. Some of the creatures on the Print Shop Companion disk include a ghost, a Frankenstein creature, and several animals. When you've made a creature you want to use or save, you press Return. Now you can save the creature as a Print Shop graphic, go into the Graphic Editor+ to modify it, or continue changing the creature. One suggestion in the Print Shop Companion manual is to print creatures extra-large, for kids to color in.

Although I think the Graphic Editor+ will get a lot of use, I suspect that the main reason that most people will buy Print Shop Companion is because of the Font Editor and the Border Editor. The Border Editor is simple to use, yet is still quite versatile.

Each border consists of 3 different parts which can be arranged in different ways. There is a cornerpiece, a horizontal piece, and a vertical piece. They can be arranged in different ways, including upside down and backwards, thus allowing you to correctly orient each corner of the

border. The border currently being edited is shown on the screen, and you can even print out a sample of the border. You can even copy one square of a border to another square. I wish I could say more about this feature, because it is very useful, so I'll mention here that Print Shop Companion allows you to use your choice of the keyboard, a joystick, or either the Atari Touch Tablet or the Koala Pad for editing purposes in all the various parts of the program.

The Print Shop Companion Font Editor lets you edit and create your own Print Shop fonts. The Print Shop Companion disk also has 12 new fonts which you can use right away.

Using the Font Editor is a bit more involved than the rest of the Print Shop Companion. First you must get a font to start work with. This can be one of the fonts on either the Print Shop disk or the Print Shop Companion disk. There is also a reference font, a very simple font which has no fancy style. It is designed to be the starting point for creating your own original fonts. The reference font comes in three sizes, small, medium, and large.

The screen shows all the available characters in the font. To edit a character, you simply press that key. Now you edit the character on a dot-by-dot basis. Unfortunately, there are no shortcuts for drawing special shapes. But you can use index lines to help you in sizing and positioning your characters. In case you want to see what your font looks like, there is a print option which lets you preview it.

You have a limited amount of memory for a font. There is an indicator on the bottom of the screen which shows you how much memory you have used. I doubt that running out of memory will often be a problem, except perhaps on the largest, fanciest fonts.

When you are done editing a character, you must store it into the font, or it will not be saved. This is done by hitting the Return key. You can also store one character into another character, which is useful for creating characters which are similar, like C and G, or O and 0. When you are done editing all the characters, you can save the font to disk.

The last feature of Print Shop Companion is the Calendar option, which lets you create either weekly or monthly calendars for any year from 1753 to 9999. You can decorate them with graphics and fill in notes for special occasions.

Aside from the uses of Print Shop Companion for creating fonts and borders, I think the calendar option may be the program's most useful feature. And it's the only part of Print Shop Companion that you can use by itself, without

needing Print Shop.

Besides just creating a calendar, Print Shop Companion lets you add notes to each date. You can get a pretty good sized memo on each date, because the program uses a small type style. You can have up to 8 lines per day with up to 14 characters each. However, you are not given the option to change the type style of the memo text.

The weekly calendar option may be more useful for some people, since not everyone plans everything a month in advance. This option lets you have up to 4 lines of 30 characters each.

Unlike other parts of both Print Shop and Print Shop Companion, the calendar option lets you save the finished product to disk, so that you don't have to recreate a calendar each time you want to change one little part. You can load one that's already made, and just edit it. Unfortunately, there is still no way to preview a design before printing.

There are still some problems in Print Shop which have not been addressed in the Print Shop Companion. For example, nothing has been done about the inability to preview a design before it's printed. But I'm sure that this would probably be such a major change in the Print Shop program that it's perhaps too much to expect.

Another problem which might have been fixed is that all the borders, fonts, and graphics still use an odd system of storage on the disk, instead of the normal Atari DOS format. Without Print Shop Companion, there is no way to transfer either borders or fonts from one disk to another, or from one system to another. Now, Atari users of Print Shop have gotten around this problem with the graphics with public domain (in some cases) conversion programs which convert them into regular DOS format and back, but it may take a while for the same thing to happen for the borders and fonts. I don't know if the versions of Print Shop and Print Shop Companion for other computers share this problem. I do know that when the first public domain Print Shop graphics converter program appeared, there was a sudden flood of new original graphics appearing in Atari user group libraries and BBS systems everywhere. Print Shop probably owes at least some of its success to this, since lots of people who didn't have the program yet saw plenty of reasons to get it.

All in all, Print Shop Companion offers a very good value for users of Print Shop. Be warned of one fact: this program requires you to already have the original Print Shop program. Except for the calendar option, everything in the Print Shop Companion is designed to enhance the operation of Print Shop, and is of little use by itself.

Silent Service
Reviewed by Lloyd Suiter, Portland Atari Club

0130 hours, Sunday, December 25, 1942... The night air clings to my body. From the red light below, a whisper of smoke and the hushed sound of Jingle Bells seeps from the metal opening. The ocean seems to join in the chorus.

A star is falling across the black sky. St. Nicholas is on his merry rounds. But there is no merriment on Christmas Day for the men aboard the Seawolf, just another night, black, hot, dangerous, and far, far away from home.

I wonder what Christmas is like back home this year. Is it snowing? I wish I could see snow again. The whiteness of an open field with ever-greens coated for the winter. And Betty... my Betty... how I miss your warm longing touch...

BATTLE STATIONS!! BATTLE STATIONS!!!

DIVE! DIVE! DIVE!

Sonar Report: Enemy convoy detected. 2 transport ships, 1 troop carrier, 2 Kaibokan escorts.

A troop carrier on her way to the South China Sea, loaded to the sails with men and equipment to insure a not-so-Happy New Year's day for some poor G.I.

Two Kaibokan escorts. A deadly enemy, and one to stay away from, especially when there are two of them.

All hatches closed, Christmas tree green, periscope depth 40 feet. Steer 083 degrees, all ahead one third. Aye, Aye, Sir. Ahead one third.

And the attack begins. You're the Captain, and the fate of the Seawolf, and that of her men and the G.I.'s aboard, rest on your decisions over the next few hours.

Silent Service is a new release from MicroProse. It's a submarine simulation that puts you in command of a World War II U.S. submarine in the South Pacific, and one of the most realistic strategic simulations to date for any personal computer.

Silent Service's outstanding features include: all critical battle stations... engine room, conning tower, ship's bridge, periscope view, and has the damage reports graphically displayed. All screens are well designed and detailed, and help to bring on the ultra sense of realism.

This is no ordinary game. Silent Service is the most detailed and realistic submarine simulation to appear for a home computer ever, Players are allowed to select "reality levels" to customize the complexity, and the time scaling to help with the real time effects of the simulation. Silent Service provides a wide selection of historical scenarios, from individual attacks to patrol missions, that brings challenge to both the first time user and the experienced submarine veteran.

The manual is a work of art in design and function and will consume at lest four hours of your time. There is a function sheet of over 28 commands that are at your call to command the ship in the heat of a major conflict.

This simulation is not a video game, although the graphics are excellent. If you're a run and shoot type, you might be disappointed as you are forced to sit on the bottom and pray for the enemy above to go away.

There is so much detail that I'll just let those who buy the game read the manual to find it all out.

If you are a Navy type person, or long to command your own Killer of the Sea, then this is the simulation for you. But a bit of forewarning, not everyone makes a seaman, and to become the Captain or your own ship requires a special type. The Navy spends millions of dollars to train their officers in sea warfare. As I said, this is a very real simulation. It will take time to be an effective commander, and a very long time to be a master.

There are only two faults that I have with Silent Service. One is that it might be a bit too realistic for those players new to such simulations. However, the player can set his own mode of difficulty, so anyone can experience success. The second fault is the sound. With a program this detailed, I was hoping for more in the way of sound... like I'm used to in the movies. The Dive Warning sound is a real disappointment to me.

Silent Service is almost a perfect simulation! (That is, for Navy types. Give me a six-foot foxhole in the ground!) Now the question for you is: as Captain of your sub, will you select a quiet patrol sector in the Marianas Islands, or choose the dangerous waters off the coast of Japan? Do you use a periscope attack, or charge in at night with a surface attack. How many torpedos can you afford to use? Will they even blow up with they hit the target? These decisions, and many more, are yours to make as you take your place among the elite ranks of the Silent Service!

Good Luck and Good Hunting.

ST RICKS
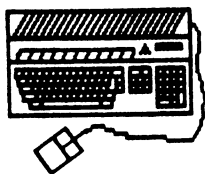
By Mike Fulton, ACAOC OrnJuce

Some of you may know that Atari is busy at work with a new and improved version of ST BASIC. They want to make it faster and smaller, with more features and no bugs. Atari wants ST BASIC to be a lean, mean BASIC MACHINE!

Atari has already given their Logo language a facelift. ST Logo was missing several features, and was slower than it should have been. But after Atari reworked it, the new Atari Logo had new features, was many times faster, and was even more compact than the original. If they can do a similar job with ST BASIC, it should be very good.

I can think of several features that I'd like to see in a new version of ST BASIC. First of all, the program editor could use some improvement. The most obvious thing to add would be the ability to move the cursor with the mouse. Right now, the mouse has no functions at all in the edit mode, other than picking menu items. It would also be nice to be able to cut and paste blocks of text with the mouse. Also, the line renumber option should be a choice in the edit menu.

As for language commands, let's start with some new window commands. I can think of several I'd like to see. How about...

WNAME x,"New Title" -- Change the title of window #x to the new string.

DEFWIND x -- Change the default window used for text and graphics output to window #x.

WINDPOS a, x, y, w, h -- Change the position and size of window #a.

There should be a function to get the position of the mouse and the state of the mouse buttons. The mouse could be read with an array function.

MOUSE(x)

Mouse.x = MOUSE(0)   ; Get mouse x pos.
Mouse.y = MOUSE(1)   ; Get mouse y pos.
Lt.butn = MOUSE(2)   ; Get left button
Rt.butn = MOUSE(3)   ; Get right button

There should also be some joystick commands, and they could be done in the same way as the joystick commands in 8-bit Atari BASIC. The STICK(x) command would read either joystick #1 or #2, and the STRIG(x) command would read their trigger buttons.

xxx = STICK(0) or STICK(1)
zzz = STRIG(0) or STRIG(1)

GEM supports a wide variety of text styles and sizes, but ST BASIC doesn't allow an easy way to change them. You can change the style with no ill effects, but if you change the text size, ST BASIC will not recognize the new size, and the letters will not be printed in the right places. This could be taken care of with just one new command.

TEXTSTYLE style, size -- Change the current text style and size.

There are plenty of little miscellaneous functions which would be nice to see. For example, how about a time and date function that you could either read or set the time and date with? This is quite common on systems with internal clocks.

NOW$ = TIME$; NOW$ = "18:43:00"
TODAY$ = DATE$; DATE$ = "06/30/86"

or to set the time and date...

TIME$ = "06:00:00" ; 6 o'clock a.m.
DATE$ = "07/04/86" ; Fourth of July!

Two other commands I'd like to see would be ones to access the GEM alert boxes and file selector box. They are a terrific way to get yes/no type input from the user. These are the GEM's most simple dialog boxes to use, so they shouldn't be a big trouble. The one to show an alert box could be done like this, returning the value of the button chosen to exit:

x = ALERT "[1][An alert in ST BASIC!][OkNo!]"

The file selector box command could simply return the file selected, or an empty string if the "Cancel" button was used to exit the routine.

file$ = FILEBOX "A: *.*"
If file$="" Then Print "CANCELED!"

I can think of other functions that would be nice, how about you? What would you like to see? Keep in mind that Atari is committed to having a GEM-based BASIC. If you don't like it, there are alternatives available from third-party companies. Send me some good ideas and I'll pick the best and pass them along to the people at Atari.

Atari ST Internals
Reviewed by: Mike Fulton, ACAOC OrnJuce

For some time, one big problem facing Atari ST owners who wanted to program their machine was a lack of technical documentation. Affordable versions of powerful languages such as C, Pascal, and Modula-2 have appeared, with full support for the special routines of the ST. Unfortunately, these packages generally haven't included enough documentation about these routines to be useful. The Atari development package includes full documentation, but much of it isn't easy to read, and it's priced out of range for many ST owners. Abacus Software has now published a pair of books to meet this need. The first book is Atari ST Internals, which covers the hardware of the ST, and all the TOS software routines except for GEM. A warning: although easier to read in many ways than the Atari documentation, the book is not meant for beginners.

Atari ST Internals starts off with a section on the 68000 cpu and the other chips used in the ST. Full pin-out diagrams and descriptions are given for each chip. This section also includes some memory addresses of chip registers. This section is very complete and contains some information which isn't even in the Atari development package documentation.

The next section deals with the ST's various interfaces, starting with a complete, detailed explanation of the keyboard controller. This includes a list of the commands for the keyboard controller's other functions, such as joystick and mouse use, along with a few short examples. There is also an explanation of how the ST's mouse operates. The Centronics parallel interface is covered breifly in the next section, and is followed by sections about the RS-232 port, MIDI connection, Cartridge slot, Floppy disk interface, and the DMA bus interface.

The remainder of the book covers the ST's operating system, TOS. GEMDOS, which is very similar to MSDOS, contains the basic system I/O routines. The BIOS functions are the lower level, hardware-specific routines used by GEMDOS. The eXtended BIOS (XBIOS) functions include even lower-level functions used by the BIOS, as well as additional routines for the ST's hardware.

The section about the GEMDOS, BIOS, and XBIOS functions comes next. There are details about each function's operation, and the procedures for calling the function. Also, GEMDOS and BIOS error codes are described. This is one of the best parts of the book, but a few changes could make it even better.

While many functions have examples in 68000 assembly language, there should also be C language examples. Also, not every function has an example. Instead, when a few consecutive functions are similar, such as routines to read a character from either the console or the auxiliary port, there is only one example given for all of them. I think each function should have its own separate examples, just to be on the safe side.

One problem with this section is that some of the routines are called by names which are different from those given in the Atari development package documentation and software. Since most third party companies have followed Atari's naming conventions in their programming language products, this could be confusing for some people.

To perform all of its low-level graphics and text functions, the ST uses a set of low-level graphics routines, written in assembly language, known as the Line A interface. The Atari ST Internals book explains about the use of the Line A routines, and includes a lot of useful information on the subject. There is a separate section just for example programs. Of course, since the Line A interface requires programming in 68000 assembly language, this section gets a bit more technical than some other parts of the book.

After the Line A section, the interrupt structure of the ST is discussed. Each of the many interrupts is mentioned, and information about changing or modifying them is given. This is very important information for those programming games or graphics applications.

The book begins to come to a close with a list of the terminal escape codes used by the ST's non-GEM text screens, and then a list of system variables. Next comes a short, general section on the instruction set of the ST's 68000 cpu, followed by an assembly listing of the ST's BIOS routines. This is from an older version of TOS, so it is no longer valid, but some people may find this interesting.

Atari ST Internals is a reference manual, not an ST programming tutorial. There are some example programs and some example program code, but the book is not aimed at a beginner. But while the example programs in the book are written with the Atari development package's 68000 assembler and linker in mind, they should be easy to convert to any other such package.

There are a few occasional typographical errors, and a few bits of misinformation, but I suppose that's to be expected in the first edition of a 450 page book. I suspect that you'll use this book as a reference many times after you first read it, which makes the fact that there is no index very frustrating. The table of contents is quite
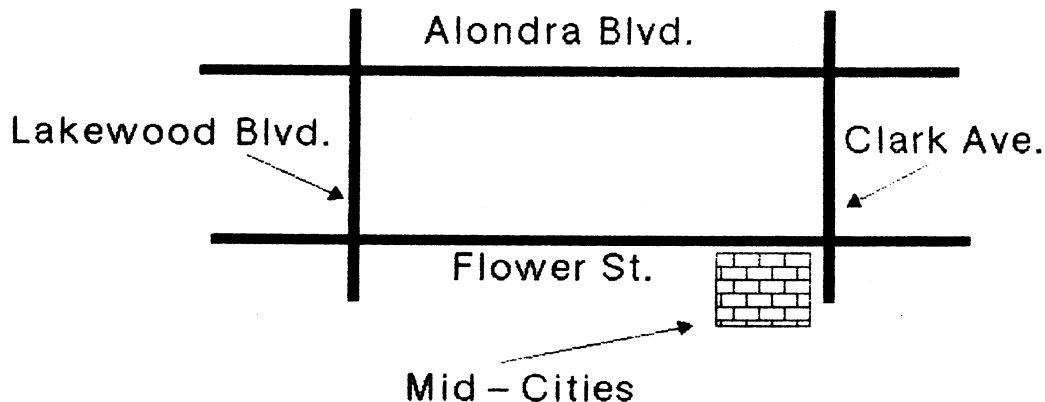
complete, but this doesn't make up for the lack of an index.

For those not interested in GEM, this book contains virtually all you need to know for programming the ST. For those interested in GEM, Abacus also publishes "Atari ST GEM Programmer's Reference." And those who want to program with GEM will eventually need this book's information anyway. Overall this book gets high marks. It fills a gap that's needed filling for a long time. Atari ST Internals is not quite the definitive reference book for the ST's hardware and basic OS, but it's very, very close.

HabaView
Reviewed by John Lavrakas, ACAOC OrnJuce

Slick. That was my first thought as I brought up on the screen HabaView, Haba Systems' new database program. It is slick. This program provides the user an extremely flexible database program, which uses, in a very comfortable manner, the full GEM interface of the ST computer. It's fast, flexible, and capable. For ST owners who want a database program that's easy to use, this may be the one.

Features

HabaView allows the user to define a database of records easily and allows him to change it later without problem. The number of records is limited only by the size of the computer memory and the disk capacity. Up to 32 fields may be defined using six different formats (e.g., text, amount, time), and their lengths may be changed at any time during the entry process.

Two modes are used to enter data: a "record" mode, allowing the user to enter and view one record at a time, and a "list" mode, allowing the user to view the database as a list, as if the records had been typed on a sheet of paper. This is a powerful feature for quickly reviewing a database without having to scroll through individual records.

Hard copy printouts of the data base in either mode may be made, printing either 80 or 132 characters per line. Printing labels is simple, although HabaView restricts these to single column labels. Numeric fields in printouts are automatically totaled. All outputs to printer can also be sent to a disk file as well, allowing one to incorporate these reports into word processing files.

HabaView will sort on any field or set of fields, and provides a record search function.

Performance

HabaView performs almost exactly as advertised. Entering and updating records is extremely easy, and the ability to modify field sizes using the mouse makes it a dream to use.

There is a bug in the record mode which prevents field names from being displayed on the screen if too many desk accessories are installed (which, in my case, were the two sets of accessories which came with the ST). I called Haba Systems about the bug, and a representative said that they were aware of the problem and that they were working on a solution. (What else could they say?) So I get around the bug by not installing my terminal program accessories.

Speed of access when using my HabaDisk 10 hard disk is great. Since HabaView keeps the whole database in memory, operation times are fast once the database has been loaded from disk. Although the sorting operation is a bit slow, it does not seem slow enough to be of concern. (My experience in sorting applied to a 200 record database). [Ed. Note: I've heard that HabaView is fast at sorting, readers may wish to investigate this for themselves.]

Documentation

HabaView comes with a small manual, nicely typeset and convenient to keep by the computer. It explains the fundamentals of HabaView satisfactorily and even contains an index. The manual includes a "Getting Started" section, one section for each of the major functions (Creating a Database, Entering Information, Printing, etc.) and a Quick Reference Guide.

Setup and Ease of Use

Setup was easy using the GEM interface. My copy included a sample list for a real-estate application. This wasn't what I got HabaView for, but it was no problem to set up the mailing list which I desired.

Fields were quickly defined using the mouse to define field lengths and locations. Changing the order of the fields was quickly accomplished using the standard "click and drag" procedure.

Printing lists was easy, although the user must remember to set the printer to condensed print when printing 132 column data; HabaView will not send a code to do this.

Habaview is copy-protected, and uses a

key-disk method which requires the original disk in drive A, an inconvenience to hard disk and floppy drive owners alike.

Serviceability and Support

A hotline is provided to all users who sign and return the registration card which comes with the software. I used the hotline to find out about the bug in displaying field names and received quick and courteous treatment. The representative did not have the answer at the time, but took my name and number and called me right back. The bug, however, remains.

Many will find HabaView a simple database program, putting your ST to work in a practical and pleasing way.

Printmaster
Reviewed by Mike Fulton, ACAOC OrnJuce

PrintMaster, a new printer graphics utility program from Unison World, is now available for the Atari ST. PrintMaster allows the user to create banners, greeting cards, calendars, and more, using different border and text styles and graphics images. The program is also available for IBM-PC and compatibles, Apple II series, Commodore 64/128, and CP/M machines (no on-screen graphics in CP/M version).

When I first saw PrintMaster on the Atari ST at the Las Vegas COMDEX show last November, I thought: it's a nice Print Shop clone. Print Shop, from Broderbund Software, is one of the most successful personal computer programs ever published. I don't know which came first, so perhaps PrintMaster has been out longer. But regardless, this is the same thing that many others will first think.

I'll compare PrintMaster with Print Shop at times, so let me say that I'm only familiar with the 8-bit Atari version of Print Shop. Other versions may have additional capabilities.

When you load PrintMaster, you get a main menu. From here you can set up your printer, exit the program, or do any of several different types of printout. You can make greeting cards, signs, calendars, stationary, and banners. There is also a graphic editor for creating your own graphics images. These are the same choices that Print Shop gives, with the exception of the calendar. Instead, Print Shop lets you create a kaleidoscope-like design with lettering called

Graphic Magic. Personally, I've found the calendar option of PrintMaster to be much more useful.

For an example of using PrintMaster, let's make a simple greeting card. First you choose that option from the main menu, which takes you to a menu where you choose either to design a new card, or either edit or print a previously made card. A card is created in two steps, first the outside, then the inside. You start with a menu showing you eleven different choices for what sort of border you want around the edges of your card. There is a menu choice for loading a border from a different disk, which points to future possibilities. This is an important fact: every item like borders, fonts, and graphic images can be loaded from either the PrintMaster system disk or a different disk. Print Shop, on the other hand, limits you to the choices on the program disk for everything except graphics images.

After choosing a border, you pick a graphic image. Again, you can choose from either the PrintMaster disk, or a separate disk. Regardless of where the graphics library comes from, each graphic is shown on screen for you to make your choice. After choosing a graphic, you pick one of three sizes for it and its position(s) on the card. After this, PrintMaster again shows its versatility over Print Shop by allowing you to use a second graphic in your card design. Print Shop allows only one graphic per design, be it card, banner, or whatever.

Now it's time to choose a font and enter the message for the front of the card. There are 8 different fonts on the PrintMaster system disk. Each varies a bit in size, so some will allow more characters per line than others. You are then asked to enter the text for each line of your message. Since PrintMaster allows you to change fonts on each line of your message, the number of lines, and their length, is decided by the combination of fonts you use. The message is not shown on screen in the chosen font, however. You can also choose between five different textures (solid, 3-d, outline, rain, and checker), and two different sizes for your text. Choosing the rain texture puts little lines across your text, you know... like rain! The checker texture prints your text in a checkerboard format.

At this point, you are asked to design the inside of your card. This part proceeds exactly like doing the front of the card. When you are done, you are given the choice of printing your design, saving the design to disk, printing a mirror image of your design (for things like T-shirt transfers), testing your printer set-up, or exiting to the main menu. I really like the save design choice. Print

Shop, by contrast, doesn't allow you to save a card design for later use.

Unlike Print Shop, PrintMaster lets you see what your design looks like before you commit it to paper. When you choose to print your design, it first draws it on screen for you to examine. When it is done, you can either go ahead and print it, or go back and make any necessary changes. This saves a lot of time and paper, since a design can be drawn on screen much faster than on paper. The image is sometimes slightly out of proportion, being taller than it should be, but otherwise everything is correct. This is great for making sure that things don't accidentally overlap, and it works for every kind of printout, from banners to greeting cards.

The other functions of PrintMaster are similar to the greeting card option. Each loads borders, fonts, and graphic images in the same manner, and each lets you see the design on screen prior to printing. But there are some differences. The calendar option, for example, allows you to enter notes for special dates. It also allows you to print either a one month or one week calendar. The one week calendar allows more detailed notes than the one month calendar, and can be quite useful for many things. If you're on a diet, you could plan out your meals a week in advance.

Unison World has also released a series of Art Gallery disks for use with PrintMaster, containing additional graphics images. I hope that we'll also see some additional fonts and borders in this way soon. Some more enterprising individuals may take note of the fact that PrintMaster uses the same size matrix for graphics images as Print Shop. So it might not be too difficult to convert Print Shop graphics into PrintMaster libraries.

PrintMaster doesn't use the ST's GEM interface. This is probably due to its heritage from the other computer systems for which it is available. Although its menu-driven design makes Print-Master very easy to learn and use, there is no way around all the menus.

About the only complaint I have about Print-Master is that it can sometimes be tedious to change one little part of a design. For example, let's say I've made a greeting card, and when I preview the design at the print menu, I decide the graphic I've chosen isn't quite right. Now I've got to slowly tread back through several menus to get to the one for the graphic images. After making my change, I've got to go back again through all the menus until I get to the print menu. This can be quite annoying when a number of small changes must be made to get a design just right. I can't help thinking that this might be improved by using GEM's drop-down menus for

getting user choices.

The manual shows all the different choices for designs, and also shows each choice for the borders, fonts, and graphics images. There are a few things which are different in the ST version than what the manual says, but the package included a note about users receiving an ST version of the manual if they send in the warranty card along with the note.

PrintMaster supports just about every graphics printer which I've ever heard of, but you should check before buying, just in case. Even if your printer isn't one of those listed, it may work if it's a "compatible" printer with one listed.

One thing to keep in mind is that PrintMaster is copy protected. Furthermore, it looks for the copy protection only on the drive from which the program is booted. This means that putting PrintMaster onto a hard disk is out.

PrintMaster helps to fill a gap which existed in the ST software line-up. It's much, much faster than the 8-bit Atari version of Print Shop, and it's easy to use. It supports many different printers, and is very versatile. Although it's not aimed at the business user, I suspect that like Print Shop, PrintMaster will find many uses in the creation of ad copy for small businesses. Home users and schools will love it too.

Normally I wouldn't publish an article like the one which follows. But I felt that since DEGAS has been such an important program for the Atari ST, it would be a good idea to print this preview of the upcoming new version, DEGAS Elite. Enjoy.

Mike Fulton, Editor

DEGAS Elite Preview
By Matthew Ratliff, From ANALOG DELPHI

DEGAS Elite! is coming September 1, 1986!

Tom Hudson, author of the program, demonstrated DEGAS Elite at the St. Louis ACE meeting July 2. The new features are phenomenal. And Tom has added a great deal of machine language code to vastly increase the speed of certain parts of the program, such as the "fat bits" edit mode.

DEGAS Elite on a 1MEG ST will give you 8 work screens and 4 resident fonts! You can switch to any of the 8 screens with a simple number keypress. DEGAS Elite has a "clipboard" feature now, where you can cut segments of a picture to a file or between different screens. These clipped blocks can even be used as BRUSHES! Tom showed a dollar bill he had drawn. It was loaded and used as a brush in the STIPPLE mode (a new feature). With the drawing speed slowed down a bit (there are 8 different drawing speeds now), he just slid the dollar-brush up the screen and drew a stack of money instantly!

It can load standard GEM fonts now, as well as traditional Degas fonts. You can cut blocks out of a screen and stretch and rotate them. The fat bits mode is superbly fast now. You can scroll the display as you edit, and you have 8 different levels of ZOOM in this mode of editing.

Now it does not matter what resolution you load up Degas in. If you are in Lo Res, you can set the loader to high res mode. Degas can then load a high res screen and remap it to the low res display. This feature is phenomenal. Degas can also load 8-bit Atari compressed Koala format files as well as the Amiga IFF format.

Do you like the color rotation in Neochrome, for pseudo animation? DEGAS Elite can do it too, only BETTER. You can break up the color pallet into different groups of colors. Each group may be rotated independently, at different speeds. You can create some bizzare effects with this!

DEGAS Elite now uses the desktop environment with drop-down menus and sophisticated dialog boxes, which helps to unclutter the main menu screen where the most common features are immediately accessible.

You have an adjustable SNAP feature, which makes drawing straight lines... well, a snap. For vertical and horizontal alignment it is a must. Tom showed us some clipboards of "bar chart blocks." Using these, he could create a 3D effect bar chart in a few simple strokes, with the snap turned on.

Another neat feature is the multi-color fills. You can edit fill patterns. but with different colors. The color pallet is now easier to deal with. If you want a nice smooth scale of blues you just set a dark blue at one end of the scale and a light blue at the other. Then let DEGAS Elite create a smooth scale of colors between. It is slick! Great for shading and a genuine 3D effect to your art works.

One of the most unique features I saw was BLEND. Create a random brush for example. With BLEND turned on, you can then blend hard edges into smooth fuzzy ones. You aren't drawing...the program is blending colors between the different colors on either sides of the edge. Tom took a very slick drawing of a man in a "space suit" and with just a bit of blending, he gave the picture an underwater effect, making it appear the man was in a diving suit at the bottom of the ocean.

The features go ON and ON. Tom was extremely receptive to the club's comments. When he left, he took a list of about 10 more features he may add to DEGAS Elite, as a result of feedback at the meeting. This product will knock your socks off! I just can't wait!!!!!

Do you have any ideas about new features for DEGAS Elite? Something which it doesn't have already, and isn't mentioned in this article? Well, if so, let me know about it. I'll pass along any good ideas to Tom Hudson via a message on the Atari Developer's SIG on CompuServe, where Tom is one of the Sysops.

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